



O.H.M.S.

W. J. Gerald
Deputy Minister

LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA.

BULLETIN No. 199

FRIAR'S BALSAM (COMPOUND TINCTURE OF BENZOIN.)

LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA.

BULLETIN No. 199

FRIAR'S BALSAM, (COMPOUND TINCTURE OF BENZOIN)

OTTAWA, March 8, 1910.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I have the honour to submit herewith the results of analysis of 70 samples of Friar's Balsam (Tinctura Benzoini Composita), collected throughout Canada in September and October of last year.

This tincture is very largely used as a remedy in bronchitis and is official in most pharmacopœias.

The composition of the Compound Tincture of Benzoin is nearly identical for the British and the United States Pharmacopœias, as follows :—

TO MAKE 1000 PARTS.

Materials from which made.	B. P.	U. S. P.
Benzoin.....	100	100
Aloes.....	18·2	20
Storax.....	75	80
Balsam of Tolu.....	25	40
Alcohol.....	q. s.	q. s.
	1000	1000

The tests prescribed by the British Pharmacopœia are :—

1. Specific gravity, about 0·900.
2. Total solids, 17 to 18 per cent,
3. Absolute alcohol, about 75 p.c.

Tinctures made in the laboratory according to B. P. directions gave results as follows :—

	Days.	Days.
Time of maceration	2	3½
Specific gravity.....	0.8981	0.8924
Total dry solids	14.6	15.4
Alcohol (vol. p. c.)	74.32	74.96

The fact that different varieties of benzoin have different solubilities may to some extent account for the varying solids found in the tinctures herein reported. It will be noted that even the tinctures made in this laboratory did not yield the amount of dry solids required (17-18 p.c.); and 17 p.c. is only reached by 7 samples out of 70 examined. Solids vary from 8.6 to 19.46 per cent., five (5) samples containing less than 10 per cent.

The alcohol used is generally of proper strength; and is genuine in 69 samples. One sample (No. 1255) is made with methyl alcohol, and is therefore adulterated.

This report shows Friar's Balsam as dispensed in Canada, to be generally somewhat below the pharmacopœial standard in dissolved solids.

I beg to recommend the publication of this report as Bulletin No. 199.

I have the honour to be, Sir,
Your obedient servant,

A. MCGILL,
Chief Analyst.

BULLETIN No. 199—FRIARS BALSAM (COMPOUND TINCTURE OF BENZOIN; TINCTURA BENZOINI COMPOSITA).

RESULTS OF ANALYSIS.																	
Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.	Quantity.	Name and Address of Manufacturer or Furnisher as given by the Vendor.	Examination for Methyl Alcohol.										
							Sp. Gr. of Sample at 15.6.	Sp. Gr. of Test-liquid to equal Volume.	Alcohol.			Total Solids, grams per 100cc.	Density.	Alcohol by Weight.	Refraction.		No. of Sample.
									Weight.	Volume.	Proof Spirit.				Theory.	Found.	
DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.																	
1909.									P. c.	P. c.	P. c.	P. c.	P. c.	P. c.			
Oct.	8 Friars Balsam.	41846	G. C. McDougall, Kentville, N.S.	90	6 oz.	Vendor	0.8707	0.8492	79.64	85.19	149.27	11.77	0.9616	27.50	64.6	64.4	0.2 41846
"	"	8	H. E. Wilson, Windsor, N.S.	60	6 "	"	0.8718	0.8514	78.76	84.47	148.03	13.61	0.9596	28.81	66.8	66.5	0.3 41847
"	"	11	A. J. Crease, Amherst, N.S.	60	6 "	"	0.8880	0.8701	70.80	77.60	136.00	17.61	0.9614	27.64	64.8	64.6	0.2 41848
"	"	11	R. C. Fuller & Co., Amherst, N.S.	50	6 "	Vendors	0.8739	0.8531	78.08	83.91	147.05	13.34	0.9514	33.82	74.1	73.8	0.3 41849
"	"	12	Crowe Bros., Truro, N.S.	55	6 "	"	0.8803	0.8649	73.08	77.61	139.52	14.40	0.9651	25.67	60.4	60.1	0.3 41850
DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.																	
Sept.	9 Friars Balsam.	39583	The Nat. Drug and Chem. Co., Ltd., St. John, N.B.	60	6 oz.	Vendors	0.8784	0.8647	73.08	79.61	139.52	12.81	0.9707	20.75	51.9	51.9	0.0 39583
"	"	15	P. J. Donohoe, St. John, N.B.	60	6 "	Vendor	0.8830	0.8701	70.80	77.60	136.00	14.88	0.9745	17.67	45.8	45.9	0.1 39584
"	"	21	R. T. Mack, Fredericton, N.B.	60	6 "	"	0.8799	0.8556	77.04	83.04	145.52	15.29	0.9623	24.15	58.1	58.2	0.2 39585
Oct.	6	39586	Fairweather Estate, Moncton, N.B.	60	6 "	Vendors	0.8913	0.8563	75.45	81.68	143.14	16.24	0.9617	27.43	61.4	61.2	0.2 39586
"	"	11	A. W. G. McDonald, Campbellton, N.B.	40	6 "	Davis, Lawrence Co., Montreal.	0.8879	0.8701	70.80	77.60	136.00	10.06	0.9652	25.00	60.1	60.2	0.1 39587

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

Sept. 13	Friars Balsam.	36652	Dr. J. L. L. Hamelin, 6 oz.	60	Lyman Sons, Montreal.	0.9435 0.8865	65.43	73.69	129.15	16.74	0.9841	25.79	61.5	61.5	0.0	36652
" 13	"	36653	L. A. Plante, Louiseville.	60	Nat. Drug Co., Montreal.	0.8818 0.8701	70.86	77.60	136.00	11.57	0.9706	20.83	52.0	51.6	- 0.4	36653
" 14	"	36654	J. A. Peltier, Trois Rivières.	60	Lyman, Ltd., Montreal.	0.8819 0.8683	71.54	78.25	137.14	11.57	0.9942	17.92	46.3	46.6	+ 0.3	36654
" 14	"	36655	R. W. William, Trois Rivières.	45	"	0.8651 0.8445	81.56	86.77	152.06	10.28	0.9705	20.92	52.3	52.6	+ 0.3	36655
" 14	"	36656	Pharmacie Normand, Trois Rivières.	50	Lyman Knox, Montreal.	0.8865 0.8790	67.13	74.33	130.26	16.70	0.9645	25.50	61.0	61.3	+ 0.3	36656

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

Sept. 15	Friars Balsam.	1251	P. A. Berard, Drummondville.	75	Unknown	0.9492 0.8822	65.75	73.07	128.05	19.02	0.9738	18.23	47.0	47.4	+ 0.4	1251
" 16	"	1252	J. B. Ledue, Marieville.	70	Lyman Knox Co., Montreal.	0.8963 0.8806	68.43	73.69	129.15	14.61	0.9597	28.75	66.8	66.7	- 0.1	1252
" 17	"	1253	Dr. Guy, St. Jean	60	Vendor	0.8909 0.8666	72.26	78.89	138.25	17.97	0.9706	20.83	52.4	52.6	+ 0.2	1253
" 22	"	1254	Dr. Lambly, Cookshire.	75	Lyman, Ltd., Montreal.	0.8931 0.8739	69.33	76.31	133.72	18.29	0.9605	28.25	65.9	65.5	- 0.4	1254
" 23	"	1255	Magog Pharmacy, Magog.	50	Unknown	0.8687 0.8384	83.92	88.64	155.34	12.56	0.9592	29.07	67.3	40.5	- 26.8	*1255

DISTRICT OF MONTREAL—J. J. COSTIGAN, INSPECTOR.

Sept. 9	Friars Balsam.	40306	A. Monat, 20 St. Catherine W., Montreal.	40	"	0.9000 0.8865	66.43	73.69	129.15	15.53	0.9754	16.92	44.3	44.4	+ 0.1	40306
" 9	"	40307	J. T. Lyons Co., suc., 577 St. Catherine W., Montreal.	50	"	0.8730 0.8611	74.64	80.96	141.89	12.03	0.9728	19.00	48.5	48.6	+ 0.1	40307
" 9	"	40308	A. B. Scarr, 703 St. Catherine W., Montreal.	65	Lyman Knox Co., Ltd.	0.9006 0.8823	65.71	73.03	127.96	15.35	0.9757	16.69	43.9	44.1	+ 0.2	40308
" 9	"	40309	C. T. Milne, 721 St. Catherine W., Montreal.	50	"	0.9015 0.8823	63.71	73.03	127.99	15.21	0.9731	17.17	44.8	45.0	+ 0.2	40309
" 9	"	40310	O. Brault, 248 St. Antoine St., Montreal.	50	"	0.8668 0.8705	70.80	77.60	136.00	14.45	0.9622	27.07	63.8	63.8	0.0	40310

* Contains wood Alcohol—Adulterated.

BULLETIN No. 199—FRIARS BALSAM (COMPOUND TINCTURE OF BENZOIN; TINCTURA BENZOINI COMPOSITA)

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cust.	RESULTS OF ANALYSIS									
					Name and Address of Manufacturer or Furnisher as given by the Vendor.	Alcohol.			Examination for Methyl Alcohol.			Refraction.		No. of Sample.
						Weight.	Volume.	Proof Spirit.	Total Solids grams per 100cc.	Density.	Alcohol by Weight.	Theory.	Found.	
						Sp. Gr. of Sample at 15.6.	Sp. Gr. of distillate to equal Vol.							

DISTRICT OF OTTAWA—J. A. RICEY, INSPECTOR.

1909.														
Sept. 22	Friars Balsam.	42831	E. H. Elvidge, Vank. 6 oz.	70	Lymans, Ltd., 0.8562 0.8396	83.38	88.22	154.60	9.40 0.9622	27.67	63.8	64.0	0.2	42831
" 25	"	42832	W. S. Robertson, 6 "	60	Vendor	77.88	83.74	146.75	13.87 0.9584	29.60	68.2	67.8	0.4	42832
" 29	"	42833	John Mc Lester, 6 "	60	Lymans, Ltd., 0.8911 0.8563	75.45	81.08	143.14	14.05 0.9631	25.47	62.7	62.4	0.3	42833
Oct. 5	"	42834	R. M. Arbutnot, 6 "	75	Nat. Drug Co., 0.8941 0.8701	70.80	77.60	136.00	13.78 0.9730	18.85	48.2	48.2	0.0	42834
" 5	"	42835	Beattie & Argue, 6 "	75	Vendors	77.04	83.04	145.52	15.94 0.9600	26.00	65.5	65.1	0.4	42835

DISTRICT OF KINGSTON—JAS. HOGAN, INSPECTOR.

Sept. 7	Friars Balsam.	42746	National Drug Co., 6 oz.	50	Vendors	0.8735 0.8720	70.04	76.94	134.84	14.47 0.9661	24.31	58.8	58.6	0.2	42746
" 8	"	42747	D. M. Waters, Belle-ville, 6 "	50	Vendor	0.8830 0.8611	74.64	80.96	141.80	15.16 0.9598	28.60	66.3	66.4	0.1	42747
" 8	"	42748	O. G. John's, Co-6 "	50	"	0.8772 0.8536	77.88	83.74	146.75	14.24 0.9604	25.94	66.6	66.8	0.2	42748
" 8	"	42749	A. J. Gould, Cobourg, 6 "	50	"	0.8643 0.8422	81.28	86.54	151.66	11.25 0.9555	31.31	70.8	70.5	0.3	42749
" 9	"	42751	E. S. Payne, Peterboro, 6 "	50	"	0.8741 0.8577	76.29	82.40	144.41	11.70 0.9750	17.25	45.0	44.8	0.2	42751

DISTRICT OF TORONTO—H. J. DAGGER, INSPECTOR.

Sept. 23	41392	Frans Balsam.	Hawkins Ltd., 6 oz.	30	0 8703 0 8402	79 64	85 19 149 27	13 05 0 9617	27 43	64 4	64 2 - 0 2	41392
" 23	"	"	Littlewoods Pharmacy, Hamilton.	50	Burroughs, Wellcome & Co., London, Eng.	67 83	74 97 131 38	16 59 0 9774	15 33	41 2	41 3 + 0 1	41393
" 24	"	"	W. H. Cummins, Dundas.	25	The Disp. Drug Co., Ltd., Hamilton.	77 04	83 04 145 52	15 81 0 9625	26 80	63 3	63 1 - 0 2	41394
" 25	"	"	G. Tamblyer, Toronto.	50	Lynan Bros. Co., Ltd., Toronto.	72 26	78 89 138 25	15 30 0 9628	26 67	63 1	62 8 - 0 3	41395
" 27	"	"	W. H. Worden, Toronto.	50	The Nat. Drug & Chem. Co., Ltd., Toronto.	73 79	80 22 140 59	13 79 0 9564	30 78	70 0	69 9 - 0 1	41396

DISTRICT OF LONDON—T. KIDD, INSPECTOR.

Sept. 13	30818	Frans Balsam.	W. A. McIntyre, St. Marys.	60	Vendor.	0 8751 0 8393	73 45	81 06 143 14	12 98 0 9709	29 58	51 6	51 7 + 0 1	30818
" 14	"	"	H. M. Myers, Stratford.	60	"	0 8941 0 8720	70 34	76 91 154 84	14 14 0 9728	19 00	48 5	48 2 - 0 3	30826
" 21	"	"	Dunlop, Goderich.	60	J. Winer & Co., Hamilton.	0 9103 0 8841	64 56	72 34 126 78	16 24 0 9745	17 67	45 8	45 4 - 0 4	30850
" 22	"	"	Walter McKibbin, Wingham.	60	Nat. Drug & Chem. Co., Hamilton.	0 9042 0 8805	65 48	73 73 129 22	16 32 0 9736	18 38	47 3	47 3 + 0 0	30861
" 27	"	"	A. Steward, Guelph.	50	Vendor.	0 8316 0 8356	77 04	83 04 145 32	16 19 0 9623	21 30	63 7	63 6 - 0 1	30864

DISTRICT OF WINDSOR—JNO. TALBOT, INSPECTOR.

Oct. 4	42969	Frans Balsam.	C. H. Gunn & Co., Chatham.	50	Vendor.	0 9003 0 8756	68 54	75 60 132 49	19 40 0 9737	18 31	47 1	46 8 - 0 3	42969
" 4	"	"	A. J. McCah & Co., Chatham.	60	"	0 8767 0 8611	74 64	80 96 141 89	10 52 0 9733	18 63	47 7	47 5 - 0 2	42910
" 5	"	"	H. O. Flanagan, Windsor.	75	Vendor.	0 8928 0 8883	71 54	78 25 137 14	16 44 0 9744	17 75	46 0	46 3 + 0 2	42922
" 7	"	"	L. A. Willoughby, Leamington.	75	"	0 8750 0 8526	77 86	83 74 146 75	14 23 0 9661	22 77	55 7	55 9 + 0 2	42939
" 8	"	"	U. M. Milton, Ridge town.	"	"	0 8214 8384	83 92	88 64 153 34	8 00 0 9600	28 62	66 6	66 7 + 0 1	42941

BULLETIN No. 199—FRIARS BALSAM (COMPOUND TINCTURE OF BENZOIN; TINCTURA BENZOINI COMPOSITA).

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	RESULTS OF ANALYSIS.												No. of Sample.
				Quantity.	Cents.		Sp. Gr. of Sample at 15°.	Sp. Gr. of distillate to equal Volume.	Alcohol.			Total Solid grams per 100 cc.	Density.	Alcohol by Weight.	Examination for Methyl Alcohol.				
									Weight.	Volume.	Proof Spirit.				Refraction.	Theory.	Found.	Difference	

DISTRICT OF MANITOBA—A. C. LARIVIERE, INSPECTOR.

1909.																		
Sept. 14	Friars Balsam.	39796	Gillespie & Campbell, Winnipeg.	6 oz.	50	Unknown.	0.8794	0.8574	76.29	82.40	144.41	12.35	0.9682	22.69	55.6	55.5	0.1	39796
" 14	"	39797	Colclough & Co., Winnipeg.	6 "	30	"	0.8804	0.8683	71.54	78.25	137.14	15.12	0.9720	19.67	49.8	50.3	+ 0.5	39797
" 14	"	39798	D. W. Bradshaw, Winnipeg.	6 "	60	Vendor.	0.8875	0.8630	73.79	80.22	140.50	14.63	0.9621	27.14	63.9	63.6	- 0.3	39798
" 22	"	39799	G. O. McCullough, Brandon.	6 "	65	Unknown.	0.8861	0.8611	74.64	80.96	141.89	16.99	0.9700	21.31	52.9	52.7	- 0.2	39799
" 24	"	39800	R. T. Hoskin, Winnipeg.	6 "	60	Vendor.	0.8757	0.8536	77.88	83.74	146.75	13.24	0.9670	23.62	57.4	57.6	+ 0.2	39800

DISTRICT OF CALGARY—R. W. FLETCHER, INSPECTOR.

Sept. 10	Friars Balsam.	35632	J. J. Johnston, Lethbridge.	6 oz.	75	H. K. Wampole & Co., Perth.	0.8877	0.8574	76.29	82.40	144.41	15.88	0.9594	28.94	67.1	66.7	- 0.4	35632
" 10	"	35633	E. M. Cawker, Hat.	6 "	75	Parke Davis Co., Walkerville.	0.8871	0.8611	74.64	80.96	141.89	15.78	0.9623	27.00	63.7	63.4	- 0.3	35633
" 10	"	35634	C. S. Pringle, Hat.	6 "	75	"	0.8766	0.8650	72.96	79.50	139.32	10.98	0.9733	18.62	47.7	47.8	+ 0.1	35634
" 14	"	35635	Curry & Cope, Calgary.	6 "	75	"	0.8785	0.8611	74.64	80.96	141.89	13.62	0.9758	16.62	43.7	44.0	+ 0.3	35635
" 14	"	35636	W. McLean, Calgary.	6 "	75	"	0.8801	0.8701	70.80	77.60	136.00	15.05	0.9728	19.00	48.5	48.4	- 0.1	35636

"	14	"	"	33636	gary. W. McLean, Calgary	6 "	75	"	"	0 8801	0 8701	70 80	77 60	136 00	15 05	0 9728	19 00	48 5	48 4 - 0 1	33636
---	----	---	---	-------	-----------------------------	-----	----	---	---	--------	--------	-------	-------	--------	-------	--------	-------	------	------------	-------

DISTRICT OF VANCOUVER—J. F. POWER, INSPECTOR.

Sept. 21	Friars Balsam.	37758	Woodwards Store, Vancouver.	Dept. 6 oz.	75	Vendor.	0 8770	0 8514	78 76	84 47	148 03	13 53	0 9615	27 57	64 7	64 4 - 0 3	37753
"	"	37759	E. S. Knowlton, Vancouver.	Van-6 "	75	Henderson Bros., Vancouver.	0 8796	0 8536	77 88	83 74	146 75	15 68	0 9665	24 00	58 2	58 0 - 0 2	37759
"	"	37760	Central Drug Store, Vancouver.	6 "	75	Nat. Drug & Chem. Co.	0 8798	0 8630	73 79	80 92	140 59	14 70	0 9723	19 42	49 4	49 2 - 0 2	37760
"	"	37761	Woods Pharmacy, Vancouver.	6 "	75	Henderson Bros., Vancouver.	0 9024	0 8756	68 54	75 60	132 49	18 48	0 9796	13 46	37 7	37 9 + 0 2	37761
"	"	37762	McDuffee Bros., Vancouver.	Van-6 "	75	Vendors.	0 8819	0 8698	72 17	78 81	138 11	15 00	0 9766	16 00	42 5	42 7 + 0 2	37762

DISTRICT OF VICTORIA—D. OSULLIVAN, INSPECTOR.

Oct. 18	Friars Balsam.	41579	Wm. Jackson & Co., Victoria.	6 oz.	60	Lymans Ltd., Montreal.	0 8817	0 8701	70 80	77 69	136 00	11 42	0 9787	14 80	39 0	38 9 - 0 1	41579
"	"	41580	Hall & Co., Victoria.	6 "	75	Vendors	0 8930	0 8701	70 80	77 69	136 00	18 48	0 9746	17 58	45 7	45 2 + 0 5	41580
"	"	41581	W. S. Terry, Victoria.	Vic-6 "	75	Parke Davis Co., Walkerville.	0 8803	0 8857	64 26	71 79	125 65	14 08	0 9732	18 69	47 9	48 0 + 0 1	41581
"	"	41582	F. J. Williams, Victoria.	Vic-6 "	75	Vendor.	0 8679	0 8574	76 29	82 40	144 41	9 65	0 9716	20 00	50 5	50 4 - 0 1	41582
"	"	41583	Geo. A. Fraser, Victoria.	Vic-6 "	75	Henderson Bros., Victoria, B.C.	0 8629	0 8473	80 42	85 84	160 43	9 70	0 9723	19 42	49 3	49 2 - 0 1	41583